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Keeping "On Task": An Exploration of Task Cohesion In Diverse Military Teams

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Military teams (e.g., combat teams, training teams, and quality teams) that have diverse and crossfunctional membership face a basic dilemma. Such diversity produces a greater range of perspectives and problem solving approaches, but at the same time decreases cohesiveness in the team. Cohesiveness historically has been examined in social terms (e.g., common interests and attitudes). Given the problems with cohesiveness, this report examines an alternative approach -- task cohesion (i.e., building team cohesion based upon the task rather than social aspects of the team). Theoretical bases of task cohesion as well as empirical findings are discussed. Recommendations for enhancing task cohesion in military teams are explored.

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KEEPING "ON TASK": AN EXPLORATION OF TASK COHESION IN DIVERSE MILITARY TEAMS

> The more voices we allow to speak about one thing, the more eyes, different eyes we can use to observe one thing, the more complete will our concept of this thing, our objectivity, be.
>
> Friedrich Nietzsche

> Diverse...team members genuinely resemble the proverbial blind men and the elephant -- each knows the part of the elephant within his grasp, each believes the whole must look like the piece he holds, and each feels that his understanding is the correct one.
>
> Peter Senge, *The Fifth Discipline*

> The core puzzle of diversity with regard to work teams is to understand the conditions under which the potential performance benefits of diversity can be maximized while simultaneously minimizing the potential performance detriments.
>
> Taylor Cox, *The Complexity of Diversity*

Teamwork is a time-honored tradition of the U.S. military. As America moves into the new millennium, miiitary teams will play increasingly important roles in the national defense. The combat environment in which these teams must operate will be complex, dynamic, ambiguous, under time pressure, and potentially life threatening (Salas, Cannon-Bowers, Payne, & Smith-Jentsch, 1998; Urban, Bowers, Monday, & Morgan, 1995). War fighting in this environment will center on highly coordinated weapons crews, aircraft crews, armored vehicle crews, and assault teams. Combat support will occur through maintenance crews, supply teams, and medical assistance teams. Indeed, many peacetime military functions will also be team-oriented: quality management teams, new project groups, staff teams, planning groups, and training teams.

Obviously, to carry out these varied activities, the military requires smooth running, effective teams, where team members can work closely and efficiently, yet still be comfortable with each other as they are motivated to carry out the group's mission. This will not be easy, because the composition of these teams will be diverse. Given the demographic variability of today's military as a reflection of the diversity of America's population in terms of gender, race, and ethnicity, and the fact that such variation will most likely increase into the 21st Century, team composition will be a central and complex issue that the military must manage well (Knouse, 1991).

race, and ethnicity, and the fact that such variation will most likely increase into the 21st Century, team composition will be a central and complex issue that the military must manage well (Knouse, 1991).

This report examines the interplay of team diversity and team cohesion. First, the concepts of teams and diversity are explored along with the advantages and disadvantages of diversity in terms of team effectiveness. Second, the report looks at the concept of cohesion and the problematic theoretical effects of diversity and cohesion on teamwork. Then, the report proposes that the traditional concept of group cohesion as social cohesion should be replaced by the concept of task cohesion. This suggestion is supported by showing several theoretical bases for task cohesion as well as empirical evidence for the efficacy of task cohesion as a unifying factor in diverse work groups. These variables are then fit into a model of task cohesion. Finally, recommendations for improving task cohesion in military teams are proposed.

Teams

Many use the term "team" and "group" interchangeably (Guzzo & Dickson, 1996). However, there are differentiating factors. (Lemons, 1997). Groups tend more toward individual accountability of their members. The group purpose is more or less identical to the broader mission of the larger organization. The emphasis is upon creating and evaluating the effectiveness of individual work products. The work group may collectively discuss and decide strategy and tactics, but much of the work is done individually. In short, in groups there is an emphasis upon the individual group member.

Teams, on the other hand, focus on mutual accountability. The mission of the team is specific and distinct from the larger organizational mission. Work products are created and evaluated collectively. The team discusses and decides strategy collectively like the work group, but unlike the work group, the real work of the team is usually done collectively. Whereas groups focus more upon the individual member, teams emphasize the team itself as the basic unit. In addition, teams require intensive communication processes, coordination, and task interdependence to operate (Salas et al., 1998)

There is also a differentiation between taskwork and teamwork. Taskwork is the task skills individual team members display. Teamwork, on the other hand, is the knowledge and skills required for team members to work together as a team. Examples of teamwork competencies in the military are shared mental models of the task, adaptability, leadership, mission analysis, communication, and cohesion (Salas et al., 1998).

Diversity

Definitions. Diversity has historically been defined as distinctive demographic characteristics, such as race, ethnicity, gender, and age, that identify individuals as collective members of those groups (e.g., African American, Latino/Hispanic, female, senior citizen) and distinguish these individuals from others who do not belong to these groupings. Taylor Cox (1993, p. 5-6) defines diversity as "affiliation of people who collectively share certain norms, values, or traditions that are different from those of other groups."

More recent definitions focus more on the variety aspect rather than the distinctive group affiliation. For example, Milliken and Martins (1996) differentiate observable differences (e.g., race, ethnicity, and gender) from underlying attributes (e.g., personality traits, values, skills, and knowledge) and posit that each type of diversity produces different organizational consequences in terms of affect (satisfaction, commitment, and work perceptions), cognitive output (innovation, perspectives on problems, and quality of ideas), and communication both within and outside the work group. Similarly, Harrison, Price, and Bell (1998) differentiate surface-level diversity (demographic) from deep-level diversity (attitudinal). They believe that each type of diversity produces different types of interpersonal interactions.

Advantages of Diversity. These varying types of diversity can hypothetically enhance many aspects of organizational performance, particularly group decision making (Cox, 1993; Knouse, 1998; Northcroft, Polzer, Neale, & Kramer, 1995; Thompson & Gooler, 1996). Groups with diverse members should make better decisions because of broader perspectives on the problem, a greater number of approaches to the problem, and a larger pool of information from which to draw. In addition, diverse groups should be more innovative and creative, drawing from the diverse backgrounds and experiences of their individual members (Cox, 1993).

Indeed, individuals from diverse backgrounds may stimulate an examination of alternative solutions that are not obvious to the majority of the group. Further, a diversity of members may present differing means of evaluating solutions and thus promote more critical thinking in the group (Cox, 1993). Moreover, diverse groups should exhibit greater synergy as individual members build upon the different ideas they encounter from their coworkers (Northcroft et al., 1995). Minority viewpoints may stimulate the creative process of the group (Thompson & Gooler, 1996).

If the group encourages all diverse members to actively participate in order to bring diverse ideas into the discussion of problems, commitment to the ensuing decision may increase. Theoretically, increased participation of group members lends to a sense of ownership of the problem solution and hence a greater commitment to see the solution work (Thompson & Gooler, 1996).

Members of diverse groups should also be able to take on a wider variety of group roles, such as information provider, summarizer, expediter, and personal supporter, due to their varied experiences, skills, and knowledge (Elsass & Graves, 1997). Finally, groups with diverse members should better understand the diverse customers the group must serve both within and outside of the organization (Knouse & Chretien, 1996). This can produce a competitive edge for the group in relation to other groups (Cox, 1993).

Disadvantages of Diversity. Work group diversity is not without its problems, however (Cox, 1993; Elsass & Graves, 1997; Knouse, 1998). The very diversity that enhances wider perspectives and differing ideas also makes it more difficult for group members to find commonalities among themselves upon which to build group cohesion and group identity (Thompson & Gooler, 1996). Instead, individuals tend to focus upon subgroup identities, such as race, ethnicity, and gender (Elsass & Graves, 1997).

While group members may be able to take on broader decision roles through diversity, communication among members becomes more difficult. Misunderstandings are more likely to occur. Indeed, alignment of members along subgroup identities may cause exclusionary communication purposely omitting members of other subgroups and even biased information exchange (Larkey, 1996).

Group members may have mixed expectations about the performance of other group members outside of their subgroup, which may lead to distorted attributions of performance. Individuals may misattribute the success of others to luck (incorrect external attribution) and failure to lack of expertise (incorrect internal attribution) (Karakowsky & Siegel, 1995).

Trust may be difficult to attain in diverse groups, and trust is needed for individuals to express willingly the differing ideas that are one of the major advantages of diverse groups. Patterns of behavior may differ among subgroup members creating differing attributions of intent. Moreover, the interpretation of trust may differ among subcultures represented in diverse groups (Porter, 1997).

Individuals may discover that power is distributed unevenly among group members based upon subgroup identification rather than upon expertise. Individuals may also perceive status incongruence, where they find individuals in roles that do not match their stereotypes of members of subgroups (Cox, 1993).

Overall, these counterproductive communications, expectations, and stereotypes may produce tension leading to intragroup conflict, such as micro-aggressive acts within the group (Elsass & Graves, 1997). One consequence may be pressure to assimilate subgroups into the larger group, thereby eliminating the unique positive contributions that these subgroups may offer (McGrath, Berdahl, & Arrow, 1995). Moreover, this pressure may lead to group process loss -- more effort devoted to conflict management, misinterpretation of nonverbal

clues, a tense group climate, and misperceptions among members (Thompson & Gooler, 1996). This pressure has been conceptualized as faultlines that, unless carefully managed, may break the group into subgroups aligned along diversity categories (Lau & Murnighan, 1998).

Cohesion

Historically the "tie that binds" the group has been cohesion, which has been defined as the close knittedness or attraction of members for the group (e.g., Cartwright, 1968). Theoreticians have differentiated three separate aspects of cohesion: attraction of members for the group, identity of members with the group, and task orientation (Mullen & Cooper, 1994). Despite the theoretical prominence of cohesion in group dynamics, the actual research is not highly supportive of the effects of cohesion upon group performance. Meta-analyses of large numbers of empirical studies show mixed findings (Gulley, Devine, & Whitney, 1994; Mullen & Cooper, 1994). The statistical relationship between cohesion and performance is not strong. Moreover, some studies have shown negative correlations (Guzzo & Shea, 1992). Indeed, even the directionality is in question. There is evidence that good group performance may just as well cause cohesion (individuals want to be part of a winning team) that argues against the concept that cohesive groups may produce good performance (Mullen & Cooper, 1994).

Cohesion conceptualization and research have assumed that groups are largely homogeneous and can directly identify with the similar values, attitudes, and interests that provide the commonalities upon which cohesion is built. Characteristics of diverse groups, particularly the degree of diversity in the group, on the other hand, cause problems for the concept of cohesion. Theoretically, group diversity can both increase and decrease cohesion (Tolbert, Andrews, & Simons, 1995). Social contact theory posits that more diversity should cause increased interaction or contact among group members, which should lead to the discovery of commonalities among members and hence cohesion should develop. Social contact theory, however, as originally formulated by Allport (1954) required four specific conditions for group success: equal status of individuals in the group, common group goals, cooperation among individuals, and support of authorities and customs. A recent review of the literature has added a fifth criterion -- the opportunity for long-term friendships to develop (Pettigrew, 1998).

Competition theory, on the other hand, hypothesizes the opposite effect. Increased diversity may cause increased competition for group resources, important roles, and power, leading to heightened tension, which in turn detracts from cohesion (Tolbert et al., 1995). At least one empirical study supports the latter competitive explanation. For government groups, the optimal level of diversity was 10-30 percent in terms of producing positive perceptions of cohesion and group performance. Higher percentages of diversity produced declining perceptions of group dynamics and performance (Knouse, 1998).

Research shows that effective groups must have some level of similarity upon which to focus (Thompson & Gooler, 1996). Given the problematic nature of cohesion, however, in terms of interpersonal attraction and social identity, perhaps it is time to shift the focus from social cohesion to an alternative dynamic upon which to base group similarity -- task cohesion.

Task Cohesion

Task cohesion is the attraction or commitment of group members to the task environment in which the group is working (Bernthal & Insko, 1993; Zaccaro, 1991). Task accomplishment is emphasized and occurs through task focus and commitment to group goals (Zaccaro, Gualtieri, & Minionis, 1995). Indeed, for some researchers the very definition of a team (versus other types of groups) emphasizes a task orientation (Salas, Bowers, & Cannon-Bowers, 1995). And, most importantly, a high task cohesive group will persist at its task in the face of environmental obstacles and pressures (Zaccaro et al., 1995).

By focusing upon the task rather than interpersonal and social aspects of the group, the group may emphasize the benefits of the diversity of its members (broader understanding of problems and clients, greater variety of approaches, synergy) without suffering many of the social problems associated with subgroup identities. In short, by keeping "on task," the group may emphasize getting the job done, rather than functioning as a social entity.

Theoretical Bases

There are several theoretical reasons why task cohesion should be effective with diverse groups.

Job Characteristics Model. The Job Characteristics Model focuses upon the job as the source of work motivation (Hackman & Oldham, 1980). The highly motivating job should contain skill variety (the individual uses a variety of different skills), task identity (there is a whole identifiable task that the individual recognizes), task significance (the task is important), and feedback on task performance.

Although the job characteristics model is most well known as an individual work motivation theory, Hackman and Oldham emphasized group performance as well. Work groups should be motivated by work that contains high skill variety, task identity, task significance, and feedback. These characteristics can be enhanced by group members who possess high task-relevant experience, good interpersonal skills, a strong understanding of task requirements, and a balance of heterogeneity (i.e., diversity) (Hackman & Oldham, 1980).

Skill Based Group Composition. Task cohesion increases when individuals interact with skilled coworkers (Bernthal & Insko, 1993). Specifically, information exchange occurs regarding the appropriateness of member skills and resources (Zaccaro et al., 1995).

Moreover, individual members can correctly assess when the situation calls for closely coordinated team skills (Salas et al., 1995). In addition, military teams in particular frequently operate in a high workload mode within an uncertain environment requiring extensive expertise in many areas (Urban et al., 1995). Theoretically, groups with diverse members should possess broader skill mixes (Thompson & Gooler, 1996).

There is a basic dilemma here into which organizations, including the military, may fall. Organizations traditionally select and train individuals on similarities (e.g., the military requiring new recruits to dress and act alike). This is termed "reinforcing fit" of the individuals to the organization (Powell, 1998). Diversity, on the other hand, produces "extending fit" by emphasizing differences, including unique skills and experiences that the organization requires. How is this seeming contradiction resolved?

Powell (1998) argued that the organization should select and train individuals on reinforcing fit for general skills and knowledge (i.e., the skills and knowledge that all individuals require to function in the organization). For specialized skills and knowledge, the organization should train on extending fit. For example, a military unit may need generalized knowledge of military tactics and language to operate as a military unit, but specialized knowledge of weapons, combatants, and the local environment to meet its particular mission in a foreign incursion. Therefore, the unit should be composed of individuals who have common knowledge of military operations, but also have specialized weapons skills and unique knowledge of the local culture and skills with the local language. These specialized skills and knowledge in concert with the other diverse abilities of the group will produce unique perspectives on the unique problems the unit will face.

Goal Setting Theory. The efficacy of goal setting for enhancing group performance has been documented in reviews of the research literature (Mento, Steel, & Karren, 1985; Tubbs, 1986). Group goals, particularly interdependent goals, tend to focus group effort on task performance (Campion, Papper, & Medsker, 1996). Moreover, task cohesion is enhanced by goal directed performance (Zaccaro, 1991). Indeed, group goals are more directly related to task performance than to interpersonal cohesion (Klein & Mulvey, 1995). Therefore, group goals can serve as a major commonality upon which diverse group members can reach consensus.

A major component of effective group goal setting is goal acceptance. Research shows that task interdependence increases goal acceptance. Another factor is leadership. Particularly in low social cohesion situations, leaders can increase goal acceptance by emphasizing group performance, rewarding cooperative efforts among group members, promoting active interaction among group members, and providing an external threat that brings members together (Podsakoff, MacKenzie, & Ahearne, 1997). The latter point may be translated into a military environment by identifying a common enemy for combat teams and competition with other units or friendly forces for support teams.

Group Identity Theory. Social identity theory emphasizes individual identification with social categories, such as race, ethnicity, and gender (Cox, 1993). Individuals, however, can also strongly identify with the work group when the group is considered important, the status of the group is high, and the distinctiveness of subgroups is de-emphasized (Northcroft et al., 1995). In addition, group identity can be enhanced by a focus on task roles and task performance (Brewer, 1995).

Empirical Bases

Empirical support for task cohesion may be found in meta-analyses of cohesion studies and in individual studies of diversity and task performance.

Meta-Analyses. Two recent meta-analyses of cohesion and group performance identify relevant task factors. Gulley et al. (1995) found that task interdependence was a key factor in creating cohesion. Task interdependence requires group coordination, cooperation, and mutual performance monitoring as well as sustained communication among members. Mullen and Cooper (1994) tested three types of cohesion: interpersonal attraction, identity (group pride), and task commitment. They found that the strongest factor was task commitment. Indeed, interpersonal attraction and group pride were weak indicators of cohesion-performance relations.

Individual Empirical Studies. Several recent empirical studies also support the effectiveness of task cohesion. Two studies demonstrate the importance of a time factor in creating cohesion. Watson, Kumar, and Michaelson (1993) studied the performance of racially homogenous and heterogeneous work groups over several months. At first the homogenous group outperformed the heterogeneous group in problem solving. After 17 weeks, the heterogeneous group was superior in the innovative and creative aspects of problem solving. Harrison et al. (1998) found that over time diverse groups transitioned away from an emphasis upon surface-level diversity (race, ethnicity, and gender) toward an emphasis on deep-level diversity (attitudes and values). The crucial factor appeared to be the richness of the interaction among group members, which was determined by the nature of the task. Richer interactions were produced by tasks requiring a breadth of group activities and a depth of task interdependence.

Zaccaro et al. (1995) studied the performance of high-and low-task-cohesive mixed-gender teams. They found that high-task-cohesive teams produced better initial performance planning, were better coordinated, communicated more often, and exchanged more information than low-task-cohesive teams. Interestingly, there was a temporary dimension here also. High-task-cohesive groups performed better under conditions of time urgency. Thus, task cohesion may take longer to develop within diverse groups, but once established, task-cohesive, diverse groups may operate effectively under time constraints.

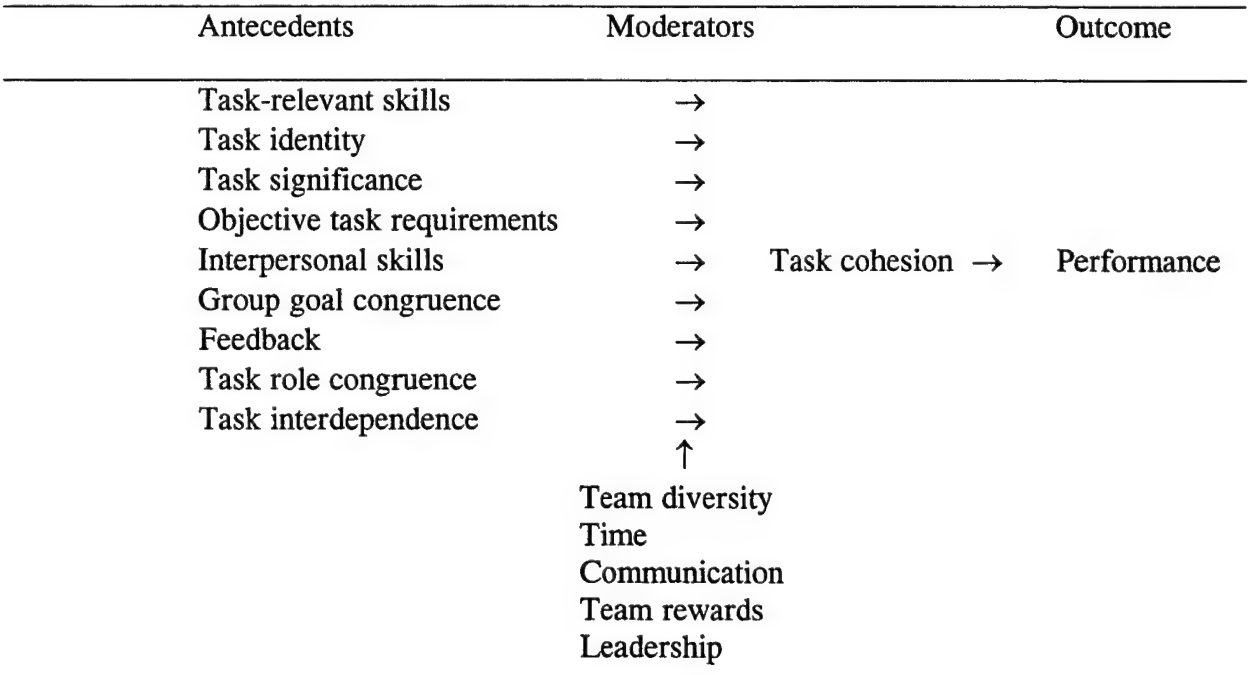
Rogelberg and Rumery (1996) looked at the performance of gender-diverse and homogeneous groups on a scientific task, stereotyped to be male-oriented. They found that all-male teams performed less effectively (lower decision quality) than teams consisting of one female and the remainder males. They speculated that the lone female may either have decreased male competitiveness or may have made the team more sensitive to the need to coordinate, integrate, and resolve differing points of view. Thus, for certain types of tasks, the mix of males and females in a group may affect various group processes.

Model of Diversity and Task Cohesion

Hackman (1992), in his review of the group process literature, identified several organizational conditions that produce task cohesion: a team that has the right mix of team members, tasks that are meaningful work for team members, a clear and engaging mission that challenges the talent of the group, direct feedback on task performance, an organization that recognizes and reinforces the accomplishments of the group, and leadership that coaches, challenges, and supports all team members, including those in the numerical minority. Figure 1 combines Hackman's factors with the theoretical concepts and empirical findings examined in the previous sections into a model of team diversity and task cohesion.

Figure 1

Model of Team Diversity and Task Cohesion



Antecedents of the Model

Task-Relevant Skills. The performance of teams greatly depends upon the competencies of its members (Salas et al., 1995). Thus, the effect of diversity upon the group skill mix is crucial. If diversity produces a task-relevant intensive skill mix, team performance improves. If diversity allows an extending fit (Powell, 1998), where individual skills complement each other, team performance improves. On the other hand, if diversity produces task-irrelevant, counterproductive skills, then team performance declines.

Task Identity, Significance, and Task Requirements. The Job Characteristics Model emphasizes the importance of task identity and task significance for motivation and group performance (Hackman & Oldham, 1980). If subgroups (e.g., race, ethnicity, and gender) identify with the task, find the work important, and understand task requirements, the team is enhanced. If subgroups, however, cannot identify with the task or find the task irrelevant for their goals or do not understand task requirements, team performance decreases.

A significant concept relating to task requirements is the Group Mental Model -- the ability of individuals in the team to work together to understand the task to the extent that they can explain procedures correctly, react to information cues appropriately, and even correctly predict task needs and member reactions (Blickensderfer, Cannon-Bowers, & Salas, 1997). A Group Mental Model depends on shared expectations of the team task and individual team members. This is particularly relevant in situations requiring quick action, such as that required of a military combat team. If diverse members of teams understand the task, team environment, and each other well, this shared mental model will produce effective team performance. On the other hand, if diversity stands in the way of mutual understanding, the team will perform poorly.

Interpersonal Skills. Interpersonal skills, such as exchanging information, being perceptive of others, identifying individual needs, and providing help to others, are important for task communication, cooperation, and coordination (Salas et al., 1995). If diversity provides compatible interpersonal skills that improve the quality of task information exchange (Elsass & Graves, 1997), the team is enhanced. If diversity produces conflicting interpersonal skills, team performance drops.

Group Goal Congruence. Group goals are a strong factor in group performance (Mento et al., 1985; Tubbs, 1986). If group goals are congruent with subgroup goals, the team is enhanced, and if group goals are interdependent, the team is enhanced (Campion et al., 1996). Active participation creates goal acceptance (Podsakoff et al., 1998), which in turn enhances congruent goals. Task interdependence also enhances goal acceptance (Podsakoff et al., 1998).

If, however, group goals are incongruent with subgroup goals or subgroups do not actively participate in goal setting, the team suffers.

Feedback. Feedback is a component of the Goal Characteristics Model (Hackman & Oldham, 1980) and is a feature of goal setting theory (Locke & Latham, 1985). Indeed, feedback is a major component creating task cohesion (Hackman, 1992). Effective team feedback is constructive, specific, accurate, and directly available (Levy & Steelman, 1997). In military combat teams, in particular, intrateam feedback from individual members about omissions and error detection is vital (Salas et al., 1995, 1998; Zaccaro et al., 1995). If diversity provides channels of feedback within the group and with group clients and provides effective feedback on team operation, team performance is enhanced. If diversity blocks feedback channels and does not provide information on team operation, the team is hurt.

Task Role Congruence. Task roles include information seeker, information provider, expediter, and summarizer (Brewer, 1995). If diversity supports task relevant roles, team performance improves. If diversity provides irrelevant or counterproductive roles (e.g., power seeker, excluder), the team declines.

Task Interdependence. Both theoretical and empirical studies identify task interdependence as an important component of task cohesion (Harrison et al., 1998; Mullen & Cooper, 1995). Specifically, in diverse groups task interdependence creates superordinate group identity (the group identity transcending individual differences) (Elsass & Graves, 1997). If diversity allows a close coordination of tasks and cooperative efforts, the team is enhanced. If diversity blocks coordination and cooperation, team performance decreases.

Moderator Variables

Time. Short-term teams may find that diversity creates too many differences and thus becomes an obstacle. Over time, however, diverse teams that interact actively may eventually find that they coalesce on task identity, group goals, and values. In addition, they may develop compatible task and interpersonal skills over time (Harrison et al., 1998; Watson et al., 1993).

Communication. Effective information exchange concerning team goals, task coordination, member skills, and use of resources enhances task cohesion (Guzzo & Dickson, 1996; Zaccaro et al., 1995). Conversely, military crew performance declines as the intelligibility of communication degrades (Salas et al., 1995). Rapid, clear, and direct communication among team members tends to enhance coordination toward mission accomplishment (Stout, Salas, & Carson, 1994; Zaccaro et al., 1995). Diverse teams may have difficulty at first in rapid and accurate communication of information about their performance. Over time, however, based upon their individual unique perceptions of the task environment, diverse team members may develop a richer vocabulary for exchanging information and hence more effective coordination.

Team Rewards. An organizational environment that rewards and recognizes group achievement builds task cohesion (Hackman, 1992). Similarly, team rewards that focus on team task accomplishment enhance team cooperation (Salas et al., 1995, 1998). Moreover, team rewards can cement task identity and group goals. In general, if these rewards are contingent, valued, and equitable, they should produce better team performance (Knouse, 1996). If rewards are compatible with the diversity mix of the team (are perceived as contingent, valued, and equitable to subgroup members), team performance should increase. If rewards, however, reinforce subgroup identity and magnify within-group competition, team performance declines.

Leadership. Team leaders who support the contribution of diverse team members enhance task cohesion (Hackman, 1992). Specifically, team leaders can draw out diverse members' unique contribution to the team as well as manage team climate (Salas et al., 1998). Team leaders can enhance many of the antecedent factors in the model. In addition, leaders can provide training that produces task relevant skills in team members. Leaders can facilitate group task identity and the importance of task accomplishment (Zengler, Musselwhite, Hurson, & Perrin, 1994). They can train and encourage task relevant interpersonal skills. Further, leaders can refine task requirements into objectives.

In addition, leaders can enhance team goal acceptance through active member participation in goal setting. They can open and enhance feedback channels within the group about performance on the task and to outside clients of the group. Moreover, they can assign and develop compatible task roles for group members. Leaders can enhance task interdependence through work assignments. They can reward team members for focusing on the task. Finally, leaders can provide an external threat (e.g., an enemy outside of the organization or competing unit within the organization) to coalesce the group toward task focus in order to overcome the external threat (Thompson & Gooler, 1996; Varney, 1989).

On the negative side, leaders can mismanage relationships with individual members in diverse teams. They can focus the group divisively on subgroup identities rather than cooperatively on task performance. Recent research shows that some diverse teams that evaluate their groups lower than homogenous groups may perceive that the quality of intermember relationships is basically good, but that the quality of individual member relationships with the leader is not very good (i.e., the leader is not handling leader-member exchanges well) (Baugh & Graen, 1997).

Recommendations for Increasing Task Cohesion in Military Teams

Based upon the Task Cohesion Model, the following recommendations are presented. To illustrate each of these suggestions, an example of a quality management team that may be composed of diverse military and civilian members (Knouse, 1994) is included as well as an

example of a combat crew of military members only (e.g., a tank crew, weapons crew, flight crew, or rifle unit) that may face unique missions in the changing military environment, while drawing upon a diverse skill mix of its members (Knouse, 1991). These two contrasting types of military teams cover a large spectrum of possible military activities. Some of the following recommendations emphasize teasing out the unique contributions of diverse team members, while other recommendations emphasize bringing together diverse individuals by focusing the team upon task performance.

1. **Diversity of Skill Mix in Team Composition**

The opportunity to work with coworkers who have a task relevant skill mix enhances task cohesion (Bernthal & Insko, 1993). Therefore, both team training and work experiences should focus on acquiring and using a relevant task skill mix. An important factor is skill needs analysis -- both individual skill needs and the skill needs mix for the team. Some instrument like the Team Skills Audit (Francis & Young, 1979), which is a listing of team needs, may be appropriate. Moreover, cross-training in multiple skills creates more team interaction (Salas et al., 1998).

Quality Team. A brainstorming exercise may allow team members to see the different perspectives of their members. Practicing on a statistical tool, such as a cause and effect diagram (Evans & Lindsay, 1996), may show what skills team members already possess. Following the practice with a team skills audit may reveal what skills training individual members require.

Combat Crew. Some exercise, such as launching an incursion into a foreign country, may show what unique skills the crew needs for survival, navigating a course of action, and initiating contact with the local population (e.g., language skills and knowledge of local customs). A debriefing or other type of feedback activity afterwards may indicate what skills the team already possesses and what skills they require to work more smoothly together.

2. **Task Identity and Significance**

The Job Characteristics Model emphasizes that team identification with the task and that a perception of importance of the task increases team motivation to work on the task (Hackman & Oldham, 1980). Training and leader communication should continually stress task orientation.

Quality Team. Training and leader facilitation should emphasize the importance of quality work, continuous improvement, and customer orientation. Team diversity can provide unique ideas for continuous improvement and a better understanding of the diverse customer groups the team serves (Knouse & Chretien, 1996). Team sessions in quality problem solving

techniques and understanding various customer groups can demonstrate the unique contributions that individual team members are capable of making.

Combat Crew. Training and leader communications should stress the importance of mission accomplishment (Thompson & Gooler, 1996). Unique individual differences among team members that contribute to teamwork can strengthen mission accomplishment. Team discussion of how each team member can contribute to mission accomplishment can demonstrate this.

The Marine Corps desires to achieve mission depth (simultaneously carrying out multiple missions) in future battlefields that will be ill-defined, supercharged, and confusing. Therefore, they have devised a physically and psychologically intensive 54-hour event in basic training termed the Crucible, which builds team cohesion through such activities as night forced marches, an infiltration, casualty evacuation, and combat field firing. The Crucible ends with a Warrior's Breakfast where recruits discuss their experiences with more senior Marines (Krulak, 1996).

3. **Richness of Interactions**

Task accomplishment and corresponding task cohesion is a function of the richness of team member task interaction (Elsass & Graves, 1997), specifically the breadth of their activities and the interdependence of their work (Harrison et al., 1998). The team leader can ensure that the group experiences broad-based, interdependent tasks requiring cooperation.

Quality Team. The team can practice quality problem solving exercises, such as brainstorming, that demonstrate the uniqueness of individual team member ideas. In addition, such exercises can demonstrate the interdependence required to evaluate these ideas and act upon them.

Combat Crew. The crew can engage in a search and rescue or search and destroy practice session that calls for unique skills of individuals but that requires everyone to coordinate their individual tasks in order to accomplish the rescue. In the Marine Corps, the Crucible serves to train unit decision making and coordination of battlefield tasks (Krulak, 1996).

4. **Objective Task Requirements**

A strong task orientation requires that team members understand task requirements well (Hackman & Oldham, 1980). Objective, explicitly stated requirements thus build task cohesion. Training can ensure team members understand task requirements well. Task specifications should be well identified in written form. In particular, the team mission should be clear, challenging, and engaging (Hackman, 1992).

Quality Team. The mission statement and goals should be specified by the quality council charging the team with its direction (Evans & Lindsay, 1996). The team can identify its task requirements and state them in their problem history (e.g., draw up a story board of their mission and proposed plan of attack).

Combat Crew. Each crew should have a clear mission statement with corollary task statements to fulfill its mission.

5. Group Goals Focusing on Task Accomplishment

Group goals tend to cement team members toward a group orientation of task accomplishment. More directly, goal-directed performance builds task cohesion (Zaccaro, 1991). Moreover, interdependent goals enhance group performance (Campion et al., 1996). Individual participation in the goal-setting process demonstrates what individuals can contribute to the overall team effort and tends to create a sense of "ownership" of team goals. Task cohesion tends to be stronger when team goals are congruent with individual member goals (Zaccaro et al., 1995).

Quality Team. Once the team receives its charter from the Quality Council, it should devote several sessions to goal setting where individual members can actively participate in contributing to, discussing, and supporting team quality goals.

Combat Crew. Of course, the overall team mission is set from above and translated to the crew by its leader, but team members can contribute during mission briefing sessions to help define subgoals required to carry out the overall mission.

6. Direct Feedback

Feedback can provide information on team progress toward goals, team operation, and potential problems. Effective feedback is specific, accurate, and continually available (Levy & Steelman, 1997). Further, effective feedback is constructive (i.e., it focuses upon performance, not personality and background characteristics, and stresses areas that can be directly changed). One current mode is 360-degree feedback, where peers, superiors, subordinates, and customers provide input (Church & Bracken, 1997). These diverse channels of feedback can provide a wider perspective on group performance and can also uncover unique aspects of performance that others perhaps cannot see (Kouzes & Posner, 1993). The diversity of team membership can serve as a means of identifying unique perspectives for feedback as well as unique channels for providing feedback.

In addition, well-coordinated team performance requires that individuals be able to identify problem areas and errors rapidly in order to correct them (Urban et al., 1995). Such

guided military team self-correction can occur in team training where the team leader questions the team about team processes. The team responses then become targets for improvement in further training. In military environments these guided self-correction teams tend to outperform teams that do not practice self-correction (Salas et al., 1998).

Quality Team. Team members can identify internal and external customers as feedback channels for 360-degree feedback. Specific team meetings can focus upon feedback from team members, internal customers inside the organization, and external customers outside the organization.

Combat Crew. The team can solicit feedback from other units with which they operate as well as have internal feedback sessions. Practice sessions can focus upon feedback in the form of rapid questions from trainers and corresponding answers from trainees about resources, needed assistance, and task status (Urban et al., 1995). The team leader can guide self-correction exercises where the leader asks focused questions on team performance and the team member answers become points for further training (Salas et al., 1998).

7. **Task-Relevant Role Taking**

Group task roles include initiator, contributor, information seeker, elaborator, orienter, energizer, and recorder (the group memory) (Varney, 1989). In addition, there are crosscutting roles spanning differing role functions that diverse team members may be able to hold especially well. Moreover, there are cognitive roles (e.g., intellective, evaluation, and decision making) as well as technical roles to which diverse members can provide unique input (Johnson & Johnson, 1997).

Quality Team. Team members can discuss statistical and problem-solving tools that uniquely suit individual backgrounds and personality (Evans & Lindsay, 1996). The team can identify various roles that individual members with differing backgrounds and unique personality traits can play particularly well.

Combat Crew. Individual crew members can be trained in unique roles that match their background, prior experience, and training for special missions, such as search and rescue or search and destroy. For example, some individuals may be well suited to repairing equipment that suddenly breaks down or is damaged. Others may be receptive to helping individual team members with problem areas. Still other members may be more perceptive of environmental changes signaling danger or an impending emergency.

8. **Building Task Interdependence**

Several studies have identified task interdependence as crucial to task cohesion (e.g., Gully et al, 1995). Further, task interdependence increases goal acceptance (Podsakoff et al.,

1998). One means of training groups for task interdependence is establishing superordinate goals requiring cooperative tasks. These exercises necessitate that each group member provide crucial input and that the overall effort is coordinated.

Quality Team. The team can train on solving quality problems that require that each member contribute something to problem definition, possible solutions, and evaluation.

Combat Crew. The crew can train on a weapons or search and rescue mission that requires that each member play an active role. An example is a Distributed Resource Allocation and Management (DREAM) task in which individual team members operate personal computers (PCs) linked into a server that maintains a radar and weapons display for each PC showing incoming enemies. Individual members must share information on threats and the status of actions in order to destroy the enemy (Urban et al., 1995).

Another example is the Marine Corps Crucible during basic training. One of the combat scenarios is a casualty evacuation, where the unit must face several obstacles that can only be overcome through coordinated teamwork (Krulak, 1996).

9. **Time Factor**

The group leader should recognize that goal setting, creating task requirements, building task interdependence, and identifying feedback channels requires time for the team to evolve into a smoothly functioning, task-cohesive group (Harrison et al., 1998; Watson et al., 1993).

Quality Team. The team leader should budget initial team development time for task-cohesion-building exercises.

Combat Crew. The crew leader should include time in training exercises for activities building task cohesion, such as discussion of how to coordinate mission accomplishment, superordinate goals, and interdependent activities.

10. **Communication**

Effective teams must be able to communicate and exchange information rapidly, effectively, and directly in order to coordinate task coordination (Urban et al., 1995; Zaccaro et al., 1995).

Quality Team. Training sessions should emphasize the vocabulary of quality -- process orientation, customer focus, continuous improvement -- as a set of common denominators for communication.

Combat Crew. Much of combat-related communication involves rapid questions and answers defining the environment, requesting resources and assistance, and defining the status of the situation (Urban et al., 1995). Training should emphasize understanding rapid-fire questions and producing quick answers that are task focused.

11. **Team Based Rewards**

Rewards that emphasize group task accomplishment build task cohesion (Hackman, 1992). In turn, individual team member evaluation should have a team-performance-based component (Knouse, 1995).

Quality Team. Member evaluations should emphasize how the individual develops skills needed for the team and what the individual contributes to the team effort. Reward and recognition should focus on individual contribution to the team, team accomplishment, innovation, continuous improvement of the team skill mix, and customer orientation (Knouse, 1995).

Combat Crew. Crew member military evaluations should rate individual contribution to the team. Some military citations and commendations should be team based. Others should emphasize individual contribution to the team effort.

After the Crucible has been completed in Marine basic training, recruits are awarded the Marine Corps emblem and the authorization to wear it on their uniform, they listen to a taped speech by the Marine Corps Commandant, and they have a Warrior's Breakfast, where they share their experiences in the Crucible (Krulak, 1996).

12. **Team Building: Shared Group Values**

Team building involves training and experiential exercises that strengthen task orientation. One important area is emphasizing task group values such as innovation, competency, shared knowledge, integrity, and achievement (Jaffe & Scott, 1995).

Quality Team. Team training and evaluations of problem-solving exercises can emphasize the quality values of innovation, empowerment (shared knowledge), and customer orientation.

Combat Team. Training and communications can stress mission accomplishment with honor and integrity.

13. **Team Building: Group Task Identity**

Teams can build a group task identity through team symbols reflecting the importance of the team, task identity, and shared values (Thompson & Gooler, 1996).

Quality Team. The team can develop a distinctive team name focusing upon its task, a team logo, and team symbols, which can be displayed on hats, T-shirts, coffee mugs, etc.

Combat Team. Team members can participate in creating a team name and logo. While the military uniform is set, perhaps distinctive baseball caps can be worn in some situations. Team symbols can be displayed in the work areas.

14. **Team Building: Cooperative Skill Learning**

The appropriate skill mix is crucial to developing task cohesion. Acquiring those skills can build upon unique diversity contributions, if the learning occurs in a cooperative environment.

Quality Team. Individuals with existing expertise in statistical tools and problem solving techniques can help those with less expertise learn both in training and in actual team operation.

Combat Crew. Training on weapons or equipment skills can occur in a team environment where individual members help each other identity problems, monitor progress toward meeting training goals, and overcome difficulties in the team meeting its goals.

15. **Leader Training**

The team leader translates the overall mission from superiors to the team, sets objective task requirements, assigns task roles, manages the setting of team goals, and coordinates the accomplishment of the team's tasks. Leader training should emphasize developing the appropriate leader skills for carrying out these various functions of coaching, facilitation, information sharing, and resource management (Varney, 1989).

The mode of military team leader training can be role playing and team simulation exercises. Many team leader skills, such as giving feedback, can be trained through a relatively short (two hour) session emphasizing information about the skill, demonstration of the skill, practice of the skill, and feedback on performance (Salas et al., 1998).

Quality Team. The quality leader serves basically as a coach and facilitator (Evans & Lindsay, 1996). Quality leader training should focus on the ability to coax participation out of each team member in goal setting and quality problem solving. In addition, training should

help the leader to identify unique individual skills that match specific task roles or that cross-cut roles particularly well.

Combat Crew. Most combat crews are not as democratized as quality teams. Thus the leader function is different. Leader training should emphasize command skills that focus on task cohesion: setting objective task requirements, emphasizing team goals, and continually communicating the importance of the task and task accomplishment. Combat team leaders, however, can also learn to give and expect feedback from team members (Salas et al., 1998).

The Marines Corps is developing a program termed Unit Cohesion, where future gun and assault team leaders observe their future team members going through infantry training. The team leaders collect information on skills attainment during training and mingle with their future members during downtimes, discussing the team mission and duty scheduling (School of Infantry, 1997).

Conclusion

This report has argued that task cohesion is perhaps a better type of group dynamic than social cohesion to emphasize in building teams. In the military, in particular, teams are task oriented. Individuals are not put on teams for social activities; rather task accomplishment is the goal. Such a task orientation nicely fits with the military emphasis upon diversity (i.e., the military as a microcosm of American society draws its members from groups with diverse backgrounds, but once in the military, individuals must coalesce into well functioning teams). While the military stresses conformity, military teams can still benefit from the unique perspectives and skill mixes of their diverse members. Thus, task cohesion is a useful vehicle for bridging the apparent disparity between the military's need for uniformity and its need to be flexible and innovative into the 21st Century.

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